Applicants also note with appreciation the telephone interview courteously afforded the undersigned counsel for the Applicants on September 1, 2005, wherein the above rejection was discussed and the arguments in support of patentability, now submitted herein in writing were presented. No agreement as to allowance was reached at the interview, but the Examiner stated she would consider Applicants' arguments when presented in writing.

As discussed in the interview, each of the independent claims of the application (claims 1, 17 and 22) makes explicitly clear that magnetic resonance signals are respectively received by at least two local antennas, and it is these signals that are respectively received by *different* local antennas that are combined in a first weighted linear combination to generate the primary mode, and are combined in a second weighted linear combination to generate the secondary mode.

This is made clear in independent claim 1 because in the respective steps referring to "generating a primary mode..." and "generating a secondary mode...", it is explicitly stated that the *received* magnetic response signals are combined in the manners described. In the first step of claim 1, it is explicitly stated that at least two magnetic resonance response signals are respectively received with at least two local antennas, thereby making clear that in the subsequent steps the "received magnetic resonance response signals" are from at least two different local antennas.

In independent claim 17, the first step includes "simultaneously receiving one magnetic resonance response signal with each of said local antennas," and each of the subsequent steps regarding generating the primary mode and generating the secondary mode refer to "combining *said* magnetic resonance response signals...". This again makes clear that in order to generate the primary mode and the secondary mode, signals from at least two different antennas are combined (in different manners).

This is also made clear in independent claim 22 because the combination network is stated to form at least two different modes from respectively different linear combinations of antenna signals *respectively* received by at least two local antennas.

The word "respectively" explicitly indicates that the signals that enter into the "different linear combinations" are received by at least two different local coil antennas.

A further basis for distinguishing independent claim 22 over the teachings of the Srinivasan et al. reference, discussed in further detail below, is the explicit statement in claim 22 that the combination network has at least two outputs at which the different modes are respectively present. This means that the combination network has (at least) one output at which one of the modes is present, and another output at which another, different one of the modes is present.

In the Srinivasan et al. reference, two antenna configurations are provided, one being designated as the birdcage coil 42 and the other being designated as the quadrature coil pair 44. Each of these coil configurations has outputs for two linear modes.

Applicants do not agree that the term "mode" as used in the Srinivasan et al. reference is the same as the meaning of the word "mode" (defined at page 3, lines 14-15 of the present specification) used in the present application. Nevertheless, Applicants believe sufficient other reasons exist for distinguishing the claims over the teachings of Srinivasan et al., and therefore this difference in meaning need not be discussed in detail.

As shown in Figure 2 of the Srinivasan et al. reference, the outputs from the birdcage coil 42 are supplied to a processing circuit 62. The processing circuit 62 contains analog-to-digital converters (A/D) 64 for each output, and the outputs of the converters 64 are supplied to a digital combiner 66. As stated at column 4, lines 51-55, the digital combiner 66 digitally combines the two modes to produce a digital output signal for each coil, which is communicated to a corresponding radio frequency receiver 68, which demodulates the resonance signals.

An identical circuit 62 is provided for the quadrature coil pair 44.

Therefore, the "modes" (whatever their meaning) that are combined in the Srinivasan et al. reference are from the *same* antenna. The two modes of the birdcage coil 42 are combined in the processing circuit 62 that is shown in detail at the bottom of Figure 2, and the two modes of the quadrature coil pair 44 are combined in the other processing circuit 62. Each processing circuit 62 supplies an output to a radio frequency receiver 68. These respective outputs, however, do not represent individual modes, because the modes have *already been combined* in the respective processing circuits 62.

It should be noted that although in Figure 4 an "overlap" step 118 is indicated, everything that is shown in Figure 4 is for calibration purposes, and has nothing to do with receiving, or combining, actual magnetic resonance signals.

Moreover, it is clear from the disclosure of the Srinivasan et al. reference that the respective signals from the two processing circuits 62 are *not* combined with each other. As explained in the introductory portion of the Srinivasan et al.

reference, the coil arrangement disclosed in that reference is for the purpose of alleviating the problem that arises due to the fact that different types of reception coils, such as a local coil and whole-body coil, are often used in close proximity to each other, resulting in mutual interference between the two coils. In the example given at column 6 of the Srinivasan et al. reference, beginning at line 54, the birdcage coil 42 is configured to receive a patient's head, while the quadrature coil pair 44 is configured to receive the patient's neck and upper chest. Therefore, it is clear that separate data sets are acquired with the two different coils, one being used to reconstruct an image of the head and the other being used to reconstruct an image of the neck and torso. It is, of course, possible that these separate images could be displayed side by side, so as to form a continuous image of the upper body of the patient, but this is not the same as combining the magnetic resonance signals themselves to form a primary mode and a secondary mode, as set forth in the claims of the present application. In fact, if the respective outputs of the processing circuits 62 in Srinivasan et al. were combined in any manner, this would destroy the intended operation because then the "head" signals acquired by the birdcage coil 42 would be "polluted" by the "neck and upper chest" signals from the quadrature coil pair 44, and *vice versa*, and thus a clear head image could not be obtained nor could a clear neck and upper chest image be obtained.

Lastly, as a further argument in support of the patentability of all of the independent claims, although the Examiner stated that the Srinivasan et al. reference teaches the generation of a primary mode by combining the received magnetic resonance signals in a first weighted linear combination, and teaches generating a secondary mode by combining the received magnetic resonance signals in a second weighted linear combination, the Examiner did not identify a passage in the Srinivasan et al. reference as allegedly teaching such first and second weighted linear combinations. The processing circuit 62 merely combines the modes from the birdcage coil 42 or the quadrature coil pair 44 in whatever manner they happen to arrive from each coil. There is no "weighting" that is applied at all to the incoming mode signals. Moreover, each of the processing circuits 62 is identical, and therefore even if the Examiner does consider some type of "weighting" to possibly take place within each processing circuit 62, such weighting is identical in each circuit, and therefore does not represent the first and second different weightings that are set forth in the claims of the present application.

As a separate argument in support of the patentability of independent claim 22, as noted above that claim requires a combination network having two outputs with one mode being present at each of the outputs. Even if the processing circuits 62 are alleged to otherwise correspond to the combination network, it is clear that each of those circuits has only one output, and moreover, the "modes" that are supplied as inputs to each processing circuit 62 are already combined at that one output, and therefore two different modes are not available from either of the processing circuits 62.

For the above reasons, the Srinivasan et al. reference does not disclose all of the elements of any of independent claims 1, 17 and 22, and thus does not anticipate any of those claims under 35 U.S.C. §102(b).

Claims 7, 10, 11, 14 and 15 add further method steps to the novel method of claim 1, and claims 18-21 add further steps to the novel method of claim 17, and claims 23, 27, 30, 31 and 38 add further structure to the novel combination of independent claim 22. Therefore, none of those dependent claims is anticipated by the Srinivasan et al. reference for the same reasons discussed above in connection with the independent claims.

All claims of the application are therefore submitted to be in condition for allowance. The present Amendment does not raise any new issues requiring further searching or consideration, and is therefore enterable at this stage of prosecution, following the final rejection. Moreover, since the Srinivasan et al. reference was cited for the first time in the final rejection, this is the first opportunity that the Applicants have had to know, or respond to, the Examiner's position regarding the teachings of the Srinivasan et al. reference.

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